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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/661,952	09/12/2003	Suk-kyun Lee	11948.24	8381

7590 08/24/2004
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EXAMINER

WOJCIECHOWICZ, EDWARD JOSEPH

ART UNIT	PAPER NUMBER
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2815

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/661,952

Applicant(s)

LEE ET AL.

Examiner

Edward J Wojciechowicz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 11-15, 23 and 24, ²⁵ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 16-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Election/Restrictions

Applicant's election with traverse of the restriction requirement in the reply filed on 8-02-04 is acknowledged. The traversal is on the ground(s) that claim 11 teaches a process that can form a product that does not have only the body region between the channel stop regions. This is not found persuasive because the gate electrode is not actually formed "between" the channel stop regions, but rather is formed above these regions.

The requirement is still deemed proper and is therefore made FINAL.

A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-10 and 16-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Kitamura et al. This reference shows all of the structural features of the claimed invention. For example, comparing the structure of claims 1 and 16 with Fig. 2 of Kitamura, the reference shows a substrate (1) of a first type, a burying layer (2) with a high concentration of a second conductivity type, a well (3) with a low concentration of the second type and formed on the burying layer, a body region (5 and 21) of a first conductivity type formed in the well, first and second channel stop regions of the second conductivity type comprised by regions (6 and 3) and the right side of source region (26) which has a lower doping

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concentration, as illustrated by the doping profile of Fig. 3(a). In addition, Kitamura shows a gate electrode (10), source/drain regions (26), a body contact region in the source region, formed by the far left side of layer (8) in Fig. 2, and where only the body region exists between the first and second channel stop regions. Since the claim does not distinguish between the similarly doped well region and the second channel stop region, these regions can be considered to be continuous with each other and essentially indistinguishable from each other, as illustrated applicants' own Fig. 3 embodiment.

With regard to the structure of the dependent claims, clearly the Kitamura device, in order to be operable, would, of necessity, have a acceptable breakdown voltage and avoid unwanted punch-through. In addition, the channel stop regions of Kitamura can have a higher doping concentration since they may be formed by ion implantation of the same type dopant as the well, after the well region is already formed. Figure 2 of Kitamura also shows a gate insulator having thick and thin portions (9 and 7a), and overlying parts of both channel stop regions, the body region and the thicker portion of the gate insulator layer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward J Wojciechowicz whose telephone number is 571-27-1739. The examiner can normally be reached on Monday through Wednesday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Edward J Wojciechowicz
Primary Examiner
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